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BEFORE THE ARIZONA CORPORATION COMMISSION

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DOUG LITTLE - Chairman
BOB STUMP
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IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR THE ESTABLISHMENT OF JUST AND REASONABLE RATES AND CHARGES DESIGNED TO REALIZE A REASONABLE RATE OF RETURN ON THE FAIR VALUE OF THE PROPERTIES OF TEP DEVOTED TO ITS OPERATIONS THROUGHOUT THE STATE OF AZ AND FOR RELATED APPROVALS.

DOCKET NO. E-01933A-15-0322

DOCKET NO. E-01933A-15-0239

NOTICE OF FILING OF DIRECT TESTIMONY OF KEVIN KOCH

Q. Please state your name and business address.

A. My name is Kevin Koch. My business address is 612 N. 7th Ave, Tucson, Arizona, 85705.

Q. What is the purpose of your Direct Testimony?

A. The purpose of my testimony is to explain the effects of proposed rates on customer owned solar and to propose options which would allow for the continued viability of the solar opportunity.

Q. Are there any principles you would like to be considered as a framework for establishing rates for solar customers?

A. Yes, I favor market signals, over a cost of service model. Market signal rates are in the public interest, as cost of service rates would lead to a further economic stratification (regressive rather than progressive rates), discourage new development, and discourage energy efficiency.

Energy efficiency and conservation signals are vital to our economy. The less energy we use, the more resources we will have to put toward other economic activities. This is true both due to the reduced cost of paying directly for electricity generation, as well as secondarily though paying less indirect costs for externalities of health care, climate related expenses, etc.

DG is good for our community economic vitality, even if it is not as cost efficient as utility scale solar. While I support the majority of investments being made in utility scale projects, large commercial projects as well as small commercial and residential projects will bring outside investment dollars and contribute to the desirability index of the Tucson area. This is consistent with 10 years of Commission policy supporting lowest cost to the ratepayer solar incentives.

It is important that the solar opportunity continues to be a viable option for DG customers, both for the economic vitality listed above, and as a means to protect the investment that the Commission has supported. If DG solar is no longer viable, existing systems are likely to fall into disrepair and the investment the Commission made will be wasted. In addition, public faith in renewable energy could be compromised as it was in the 1980s when solar incentives were removed too quickly and the majority of systems were abandoned and fell into disrepair.

In addition, innovation in the DG space has benefitted the state of AZ and the utilities as innovation, training and product development have dramatically lowered the cost of solar. This DG space should continue to receive support as it delivers innovation, community engagement, cost reductions and environmental benefits to Arizona.

Lastly, there seems to be common agreement on the value of gradualism with regard to ratemaking. The question then, is, what is the definition of gradual. TEP claims that since their proposal does not go all the way to addressing the cost shift as they see it, their proposal is gradual. It is my opinion that gradualism from the customer's perspective looks something like less than 10% change in their rates. The TEP proposal calls for approximately 50% reduction in the value of solar generated energy. I would support proposals that maintain reductions of less than 10% to the value of the electricity produced by a solar electric installation

Q. Can you evaluate the effect of the proposed three part rates on future solar customers?

A. It is very difficult to value the impact of solar on demand charges. For lower demand ratepayers, solar mostly likely will not reduce their demand. Therefore, savings from solar for these customers will be $0.0623/kwh. For customers with summer demand below approximately 6kw, the approximate payback for investing in a solar system would go from 8.7 years to 16.4 years. For medium load residences, solar systems could be sold with a demand manager, and approximate payback would go from 8.6 years to 12.1 years. For high demand homes, the approximate payback goes from 8.2 years to 12.1 years.*

Therefore, the proposed rate structure would most likely have the effect of greatly slowing the adoption of customer owned photovoltaic systems, and would bias adoption primarily toward larger users.

*Assumptions based on 1760 kwh/kw/yr., demand manager reduction of 3 – 4 kw for medium users and 4 – 5 kw for larger users, and a demand time of use period similar to current time of use rate periods.

Q. Do you think that the proposed three parts rates will be effective at reducing system wide demand during peak hours?

A. In our limited testing of a demand manager combined with solar, afternoon peak contribution would increase, while early evening peak contribution would decrease. This is because in order to remain comfortable during the early evening, it is advantageous to pre-cool a home in the early afternoon. Whereas with current rates a home with solar will often overproduce in the late afternoon, under demand based rates a home will likely have net consumption all afternoon and evening.

Q. Do you have any alternative proposal?

A. Yes. I would propose the establishment of a simple market signal based rate designed to continue to support the adoption of customer owned solar. I would propose that solar customers have the choice of two rate plans, one designed to support customer owned solar with as little subsidy from a cost of service perspective as possible, and the other designed to encourage innovation and evolution of the smart home and smart grid.

The first rate should use a metric of 8-10 years for payback for solar. I think a rate which either contains a grid usage fee or a low demand charge that results in a volumetric charge of $0.10/kwh would meet this requirement. For higher energy users this would be more like a 20% reduction in the value of solar, but for the lower energy users it would meet the 10% threshold for gradualism. Higher energy users would have the option of using the second rate structure.

The second rate structure should have a low volumetric energy charge (in line with real cost to deliver), but inclining demand charges during peak periods. The first 2 or 3 kw should be $7 or less per kw, and after that demand rates should increase steeply to over $15/kw. If shifting demand is really beneficial for TEP, this optional rate structure would incentivize larger users who are contributing more to the peak demand to implement changes. While this rate structure would risk encouraging wasteful use of energy outside of the peak period, it would provide an alternate way to encourage solar while meeting TEP's need to reduce peak demand. This rate structure would align market signals with demand reduction and innovation that could result in a better synergy between customer owned solar generation and TEP's operational needs.

Q. Do you support TEP's proposal to end Net Metering in favor of an excess solar buyback rate pegged to market rates for utility scale power purchase agreements?

A. TEP's proposal is consistent with their philosophical move to cost of service rates. As stated above, I am more in favor of market signal rates, which ultimately send price signals to customers to conserve energy. As such, I am not in favor of TEP's proposal to end net metering. I believe that it would be difficult for potential solar adopters to know what their savings will be based on TEP's proposed arrangement. Furthermore, the value of a system installed on a residence could change dramatically upon sale of the home to a new occupant with different living habits. This would make the already challenging business of appraising solar energy systems even harder, and further disincentivize customer owned solar installations in the market. I believe that net metering should be preserved, and any changes in the value of solar should be made to rates for both consumed and produced electricity.

Q. Should existing solar customers be grandfathered, and if so, as of what date?

A. If changes made to rates are gradual from the rate payer's perspective (less than 10% reduction in the value of the solar energy produced, I would support applying the new rates to all solar customers, or to a grandfather date of June 1, 2015. However, if rate changes are not gradual from the solar customer perspective, I would advocate for grandfathering as of the date of adoption of the new rates.

Q. Is there anything else you wish to comment on?

A. Yes. I do not believe that the effect of the proposed rates on conservation and energy efficiency are in the public interest. The elimination of the top tiers in the inclining block rate structure combined with the increase in the basic service charge will increase the burden of paying for our electricity infrastructure on the working class, while decreasing the relative burden of the well-off. At this time of economic uncertainty and stratification I do not support this change in cost recovery.

Q. Does this conclude your testimony?

A. Yes.

RESPECTFULLY SUBMITTED this 23rd day of June, 2016.

Kevin Koch

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Hearing Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007
HearingDivisionServicebyEmail@azcc.gov

Barbara LaWall
Charles Wesselhoft
PIMA COUNTY ATTORNEY'S OFFICE
32 North Stone Avenue, Suite 2100
Tucson, Arizona 85701
Barbara.LaWall@pcao.pima.gov
Charles.Wesselhoft@pcao.pima.gov
Attorneys for Pima County

C. Webb Crockett
Patrick J. Black
FENNEMORE CRAIG, P.C
2394 East Camelback Road, Suite 600
Phoenix, Arizona 85016
wcrocket@fclaw.com
pblack@fclaw.com
Attorneys for Freeport Minerals Corporation and
Arizonans for Electric Choice and Competition

Kevin C. Higgins, Principal
ENERGY STRATEGIES, LLC
215 South State Street, Suite 200
Salt Lake City, Utah 84111
KHiggins@Energystrat.com

Meghan Grabel
Osborn Maledon, PA
2929 North Central Avenue, Suite 2100
Phoenix, Arizona 85012
mgrabel@omlaw.com
Attorneys for AIC

Gary Yaquinto
Arizona Investment Council
2100 North Central Avenue, Suite 210
Phoenix, Arizona 85004
gyaquinto@arizonaic.org

Craig A. Marks
Craig A. Marks, PLC
10645 North Tatum Boulevard, Suite 200-676
Phoenix, Arizona 85028
Craig.Marks@azbar.org
Attorney for Arizona Utility Ratepayer Alliance

Pat Quinn
President and Managing Paltrier
Arizona Utility Ratepayer Alliance
5521 East Cholla Street
Scottsdale, Arizona 85254
Pat_Quinn47474@gmail.com

Timothy Hogan
Arizona Center for Law in the Public Interest
202 East McDowell Road, Suite 153
Phoenix, Arizona 85004
thogan@aclpi.org
Attorney for Vote Solar

Rick Gilliam
Director of Research and Analysis
The Vote Solar Initiative
1120 Pearl Street, Suite 200
Boulder, Colorado 80302
rich@votesolar.org

Briana Kobor/Vote Solar
Program Director DG Regulatory Policy
360 22nd Street, Suite 730
Oakland, California 94602
briana@votesolar.org

Michael Hiatt, Staff Attorney
Katie Dittelberger
Earthjustice Rocky Mountain Office
633 17th Street, Suite 1600
Denver, Colorado 80202
mhaitt@earthjustice.org
kdittelberger@earthjustice.org

Thomas A. Loquvam
Pinnacle West Capital Corporation
PO Box 53999, MS 5695
Phoenix, Arizona 85072
Thomas.Loquvam@pinnaclewest.com

Kerri A. Carnes
Arizona Public Service Company
P.O. Box 53072, MS 9712
Phoenix, Arizona 85072-3999
Keri.Carnes@aps.com

Bradley Carroll
TUCSON ELECTRIC POWER COMPANY
88 East Broadway Boulevard MS HQE910
PO Box 71 1
Tucson, Arizona 85701
bcarroll@tep.com

Michael Patten
Jason D. Gellman
SNELL & WILMER L.L.P.
One Arizona Center
400 East Van Buren Street, Suite 1900
Phoenix, Arizona 85004
mpatten@swlaw.com
jhoward@swlaw.com
docket@swlaw.com
Attorneys for Tucson Electric Power Company
And UNS Electric, Inc.

Tom Harris, Chairman
Arizona Solar Energy Industries Association
2122 West Lone Cactus Drive, Suite 2
Phoenix, Arizona 85027
Tom.Harris@AriSeia.org

Travis Ritchie(pro hoc vice)
Sierra Club Environmental Law Program
85 Second Street, 2nd Floor
San Francisco, California 94105
Travis.ritchie@sierraclub.org
Camila Alarcon
Gammage & Burnham, PLC
Two North Central Avenue, 15th Floor
Phoenix, Arizona 85004
calarcon@gblaw.com
Attorneys for SOLON

Michele L. Van Quathem
Law Offices of Michele Van Quathem, PLLC
7600 North 15th Street, Suite 150-30
Phoenix, Arizona 85020
mvq@mvqlaw.com
Attorneys for SOLON

Daniel Pozefsky
RESIDENTIAL UTILITY CONSUMER
OFFICE
1110 West Washington, Suite 220
Phoenix, Arizona 85007
dpozefsky@azruco.gov

Nicholas Enoch
Jarrett J. Haskovec
Edith A. Tornabene
LUBIN & ENOCH, P.C.
349 North Fourth Avenue
Phoenix, Arizona 85003
nick@lubinandenoch.com
jarrett@lubinandenoch.com
emily@lubinandenoch.com
Attorney for IBEW Local 1116

Lawrence Robertson, Jr.
PO Box 1448
Tubac, Arizona 85646
tubaclawyer@aol.com
Attorney for Noble Americas Energy Solution,
LLC and Southern Arizona Home Builders
Association

Kurt J. Boehm (pro hoc vice)
Jody Kyler Cohn
BOEHM, KURTZ & LOWRY
36 East Seventh Street, Suite 1510
Cincinnati, Ohio 45202
kboehm@bklawfirm.com
jkyler@bklawfirm.com
Attorney for The Kroger Co.

John William Moore, Jr.
MOORE BENHAM & BEAVER PLC
7321 North 16th Street
Phoenix, Arizona 85020
jmoore@mbmblaw.com
Attorney for Kroger

The Kroger Co.
Attn: Corporate Energy Manager (G09)
1014 Vine Street
Cincinnati, Ohio 45202
dgeorge@kroger.com

Steven J Barton
J. Kennedy & Associates
570 Colonial Park Drive, Suite 305
Roswell, Georgia 30075
sbaron@jkenn.com

Jeffrey Shinder (pro hoc vice)
Constantine Cannon LLP
335 Madison Avenue, 9th Floor
New York City, New York 10017
jshinder@constantinecannon.com

Richard O. Levine (pro hoc vice)
Constantine Cannon LLP
1001 Pennsylvania Avenue NW Suite 1300
North
Washington, DC 20004
rlevine@constantinecannon.com

Court S. Rich
PPC
7144 East Stetson Drive, Suite 300
Scottsdale, Arizona 85251
crich@roselawgroup.com
Attorney for The Alliance for Solar Choice ("TASC") And Energy Freedom Coalition of America ("EFAC")

Cynthia Zwick, Executive Director
Arizona Community Action Association
2700 North 3rd Street, Suite 3040
Phoenix, Arizona 85004
czwick@azcaa.org

Kevin Hengehold, Energy Program Director
Arizona Community Action Association
2700 North 3rd Street, Suite 3040
Phoenix, Arizona 85004
khengehold@azcaa.org

Jeff Schlegel
SWEEP Arizona Representative
1167 West Samalayuca Drive
Tucson, Arizona 85704-2334
schlegelj@aol.com

Ellen Zuckerman
SWEEP Senior Association
1627 Oak View Avenue
Kensington, California 94707
ezuckerman@swenergy.org

Scott Wakefield
Hienton & Curry, PLLC
5035 North 12th Street, Suite 110
Phoenix, Arizona 85014
swakefield@hclawgroup.com
Attorney for Wal-Mart

Steven W. Chriss
Senior Manager, Energy Regulatory Analysis
Wal-Mart Stores, Inc.
2011 Southeast 10th Street
Bentonville, Arkansas 72716-0550
Steven.chriss@wal-mart.com

Ken Wilson
Western Resources Advocates
2260 Baseline Road, Suite 200
Boulder, Colorado 80302
Ken.wilson@westernresources.org

Karen White
139 Bases Drive, Suite 1
Tyndall Air Force Base, FL 32401
Karen.white.13@us.af.mil
Attorney for DoD/FEA

Kyle J. Smith
9275 Gunston Road (JALS RL/IP), Suite 1300
Fort Belvoir, VA 22060
kyle.j.smith124.civ@mail.mil
Attorney for DoD/FEA

Jeffrey W. Crockett
CROCKET LAW GROUP PLLC
2198 East Camelback Road, Suite 305
Phoenix, AZ 85016
jeff@jeffcrockettlaw.com
Attorney for Tucson Meadows, LLC

Bruce Plank
2958 North Saint Augustine Place
Tucson, AZ 85712
solarlawyeraz@gmail.com

Garry D. Hays
Law Offices of Garry D. Hays, PC
2198 East Camelback Road, Suite 305
Phoenix, AZ 85016
ghays@lawgdh.com
Attorney for Arizona Solar Deployment Alliance (ASDA)

Greg Patterson
Munger Chadwick
916 West Adams, Suite 3
Phoenix, AZ 85007
greg@azcpa.org
Attorneys for AZ Competitive Power Alliance

COPIES of the foregoing mailed this 3rd day of June, 2016, to:

Bryan Lovitt
3301 West Cinnamon Drive
Tucson, Arizona 85741